

BULLETIN

CREATIVITY • INNOVATION • SERVICE

Hallmarks of excellence in higher education. Keys to success in life. Be a part of it. Ask how.

Welcome to MTSU's Research and Sponsored Programs Bulletin!

It is our intention that the **Bulletin** informs the campus of the importance and impact of sponsored programs at MTSU.

The mission of MTSU's Office of Research and Sponsored Programs (ORSP) is to **promote and support faculty success** in sponsored scholarship, discovery, innovation, service, and creative activity across all disciplines at MTSU. Toward that end, we perform a dualistic role on campus: 1) compliance assurance on behalf of the University and our sponsors and 2) direct support to faculty and staff for the pursuit and administration of grants and contracts.

The **Bulletin** will provide information and highlights from our view of campus, from the Garden Level in the Ingram Building, as we carry out our departmental work program of pre-award and post-award services, FRCAC grants, URECA grants, Undergraduate Research Center activity, IRB and IACUC compliance, intellectual property management, and export control compliance.

Please never hesitate to contact me or other ORSP staff with questions, requests for assistance, or comments—including any suggestions for how we can make the **Bulletin** a helpful resource.

Jeffry Porter, Director

VOLUME 1, NUMBER 1

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FACULTY HIGHLIGHTS

A tremendous amount of valuable research takes place on the MTSU campus daily. Here are just a few select highlights:

- MTSU's Office of Research and Sponsored Programs currently manages **148 active grants and contracts** with a portfolio value of **\$36,856,372**. MTSU faculty and professional staff in **31** academic departments, centers, and administrative units submitted **73** proposals for external funding during Fall 2018, requesting **\$13,702,000**. During the same period, the University received **45** new awards valued at **\$5,760,881**.
- MTSU currently has seven pending applications for patents involving nine MTSU faculty inventors. At this time, all of the applications involve biomolecular innovations for drug discovery and other therapeutic applications.



Kevin Bicker (Chemistry) received a new U.S. patent during Fall 2018 for a "Process for Extracting a Surfactant Using Boronic Acid Modified Material." Bicker and his outside collaborator,

Robert Tilford, have developed a process by which the mixture of waste oil, detergent, and water resulting from metal milling processes can be completely separated into its component parts on-site for reuse and recycling. The process provides an alternative to treating the milling residue as bulk hazardous waste. The inventors are moving their technology toward commercialization.



Cynthia Chafin, associate director for community programs at MTSU's Center for Health and Human Services (CHHS), received five new awards

during Fall 2018 with a total value of \$761,125. Much of the center's funding flows through the Tennessee Department of Health from federal agencies, including the Centers for Disease Control and Preventions and the U.S. Department of Health and Human Services. CHHS also receives direct funding from the National Institutes of Health.



Gregory Rushton, who holds a Ph.D. in Physical Organic Chemistry and an M.Ed. in Science Education, joined MTSU in August as the new director of the Tennessee STEM Education

Center. Rushton has added four new awards from the National Science Foundation and the U.S. Department of Education's Institute for Education Science to our portfolio with a total value of \$761,125.

FACULTY RESEARCH AND CREATIVE ACTIVITY COMMITTEE (FRCAC)

FRCAC is a group of distinguished faculty committed to ongoing scholarly advancement through academic research. FRCAC's purpose is to review research and creative grant proposals submitted by faculty members from a wide range of scholarly disciplines and to award funding for selected proposals.

FRCAC received 29 applications for the fall cycle and funded four grants totaling **\$32,815**. Congratulations to the recipients:

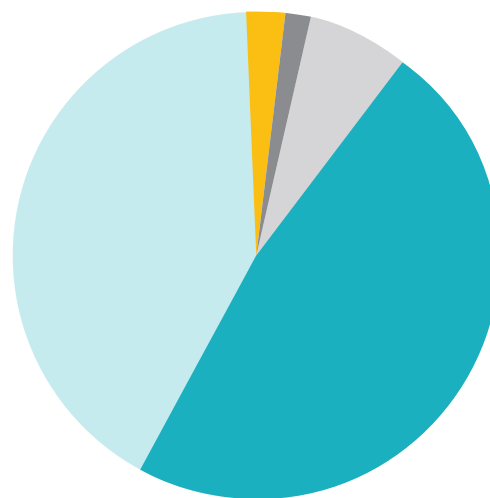
Saul Barbosa, *Computer Science*
Representation for Question Answering from News Stories

Brandon Grubbs, *Health and Human Performance*
A Cross-Sectional Analysis of Sit to Stand Power and Functional Performance in Older Adults

Rohit Singh, *Philosophy and Religious Studies*
Tibetan Buddhism in the Global Public Sphere: Technology and Transformation in Buddhist Monastic Culture

Mengliang Zhang, *Chemistry*
Fast Screening of Explosives by Ambient Ionization Mass Spectrometry

FRCAC FUNDING BY COLLEGE AY 2015-8



- LIBERAL ARTS
- EDUCATION
- BUSINESS
- BEHAVIORAL AND HEALTH SCIENCES
- BASIC AND APPLIED SCIENCES

UPCOMING FUNDING OPPORTUNITIES

Being aware of—and prepared for—funding opportunities can be challenging. To help faculty stay informed, MTSU's Office of Research and Sponsored Programs (ORSP) maintains a subscription to the comprehensive funding opportunity search engine, GrantForward. If you have not yet set up a researcher profile for opportunity notifications, please do so at grantforward.com.

Here are several future opportunities that we encourage faculty to consider.

NSF: Faculty Early Career Development Program (CAREER)

Deadline: July 17, 18, or 19 (*program-specific, see solicitation*)

nsf.gov/funding/pgm_summ.jsp?pims_id=503214

This program offers the National Science Foundation's most prestigious awards for early-career faculty who have the potential to serve as academic role models in research and education. Activities pursued by early-career faculty should build a firm foundation for a lifetime of leadership in integrating education and research. CAREER awards are available in most NSF program areas. Eligible applicants must be non-tenured and hold a title of assistant professor in a tenure-track appointment.

CAREER FAQs: nsf.gov/pubs/2017/nsf17050/nsf17050.jsp

NIH: Academic Research Enhancement Award (AREA R15)

Deadlines: Feb. 25; June 25; Oct. 25

grants.nih.gov/grants/funding/r15.htm

MTSU is well-suited for competition in the AREA R15 program. AREA supports research at educational institutions that provide baccalaureate or advanced degrees in biomedical fields, but that have not been major recipients of National Institutes of Health (NIH) support. The R15 program objectives are to support meritorious research, engage students in research, and strengthen the research environment of the institution.

Recent awards to MTSU:

- "Modulation of Macrophage Polarization by a Facultative Intracellular Pathogen," David Nelson and Erin McClelland, \$388,650
- "Trafficking of Two Novel Potential Pathogenic Intranuclear Bacteria in Eukaryotic Cells," Mary Farone, \$381,786

TBR: Course Revitalization Initiative 2019–20

Deadline: March 13

tbr.edu/academics/course-revitalization-initiative-2017-2018

The Tennessee Board of Regents is accepting grant proposals for course revitalization

projects targeting high enrollment gateway classes. Proposals submitted by teams of two or more faculty members will be considered for funding. Emphasis will be given on ramp-up proposals which involve institution-wide or multi-institutional-wide proposals.

Recent awards to MTSU:

- "Course Revitalization Grant Proposal for Engineering Courses," Vishwas Bedekar, \$25,005

USDA: Capacity Building Grants for Non-Land-Grant Colleges of Agriculture Program (NLGCA)

Deadline: TBD—May

nifa.usda.gov/funding-opportunity/capacity-building-grants-non-land-grant-colleges-agriculture-program-nlgca

The purpose of this program is to help NLGCA institutions maintain and expand capacity to conduct education, research, and extension relating to the food, agriculture, natural resources, and human sciences. Eligible activities include: (a) increasing competitiveness for funding from federal and other sources to carry out educational, research, and extension; (b) inform the public regarding matters of priority concern to the U.S. Department of Agriculture; (c) to encourage members of the agriculture, renewable resources, and other relevant communities to participate in priority education, research, and extension activities by providing matching funding to leverage grant funds; and (d) acquisition of equipment, professional development of the faculty, and development of graduate assistantships.

Recent awards to MTSU:

- "Educational and Research Capacity Building Through the Investigation of Long-Term Anthropogenic and Climatic Effects on Water Quality in Agricultural Watersheds," Henrique Momm, \$283,072
- "Transformational Education for Climate Smart Agriculture in Rural Southern US" (sub-award), Song Cui, \$204,711

NEH: Fellowships

Deadline: April 10

neh.gov/grants/research/fellowships

Fellowships support individuals pursuing advanced research that is of value to humanities scholars, general audiences, or both. Recipients usually produce articles, monographs, books, digital materials, archaeological site reports, translations, editions, or other scholarly resources in the humanities. The National Endowment for the Humanities has increased the fellowships' monthly stipend from \$4,200 to \$5,000. As a result, the minimum award is now \$30,000 (for six months of full-time work). The maximum award is now \$60,000 (for 12 months of full-time work).

The Office of Research and Sponsored Programs administers University funds to directly support mentored undergraduate research through Undergraduate Research Experience and Creative Activity (URECA) grants. These grants give students an opportunity to gain valuable research experience alongside a faculty mentor. Awards range from \$500 for beginners to \$3,500 for experienced researchers.

Check out our website for application requirements at mtsu.edu/urc/ureca/faqs-prospective.php.

Applications are due Thursday, Jan. 24, by 4:30 p.m.

HERE TO HELP!

For assistance with finding and preparing for funding opportunities, please contact your ORSP pre-award specialist:

Samantha Cantrell
samantha.cantrell@mtsu.edu

615-494-8751

Behavioral and Health Sciences, Liberal Arts, Media and Entertainment, Jones College of Business, Walker Library, University College, non-academic units

Jolene Gordon
jolene.gordon@mtsu.edu

615-898-5894

Basic and Applied Sciences, College of Education

NEW FACULTY PROFESSIONAL DEVELOPMENT SERIES: RESEARCH AND SPONSORED PROGRAMS

MTSU has a strong legacy of sponsored public service and instructional research, as well as a growing enterprise of basic and applied research. The Office of Research strives to support our faculty's continued excellence in these areas and facilitate growth in sponsored programs across campus. The vice provost for research and the director of research services will discuss their approach that includes direct service to individuals, facilitated group activities, and funding.

Wednesday, Feb. 13, 3–4 p.m.
LT&ITC, Walker Library 348
Presenters: David L. Butler and Jeffry Porter

Register at mtsu.edu/ltanditc

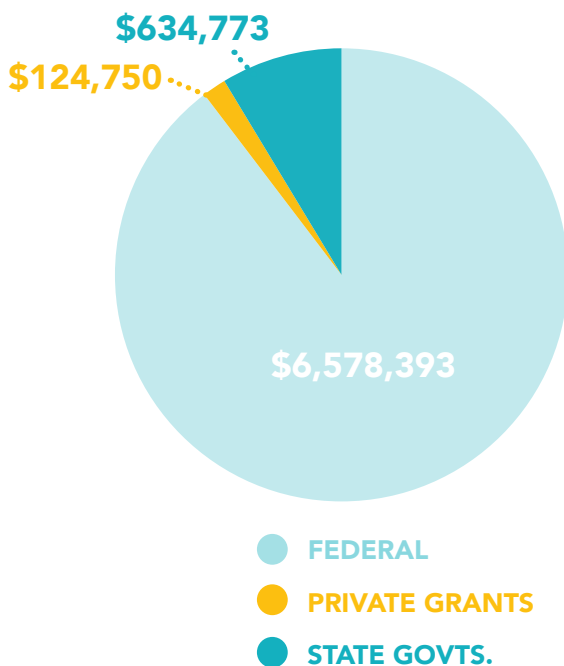
NEW AWARDS IN FY19 SINCE JULY 1, 2018

PI	DEPARTMENT	TITLE	FUNDER	AMOUNT
COLLEGE OF BASIC AND APPLIED SCIENCES				
Ding, Keying	Chemistry	XECL - A Research Program to Increase Success of STEM Undergraduate Students from Underserved Groups and Low-Income and First-Generation Families - SERS	TN Board of Regents	\$25,000
Otter, Ryan R.	Ph.D. Molecular Biosciences	Characterizations of ecologically at-risk high elevation brook trout streams in Eastern Tennessee	TN Wildlife Resources Agency	\$10,000
Hu, Yating	Engineering Technology	Course Revitalization, ENGR 3530 and ENGR 3510	TN Board of Regents	\$11,700
Spooner, Holly S.	Agriculture	A Comparison of Rice Bran Oil & Corn Oil in the Equine Diet	Riceland Foods, Inc.	\$14,638
Rushton, Gregory T.	TN STEM Education Ctr.	Collaborative Research: Teacher Leadership (T-LEAD): Investigating the Persistence and Trajectories of Noyce Master Teaching Fellows	National Science Foundation	\$282,086
Nelson, David E.	Ph.D. Molecular Biosciences	Modulation of Macrophage Polarization by a Facultative Intracellular Pathogen	National Institutes of Health	\$392,400
Ding, Wandu	Mathematical Sciences	REU Site: Computational Modeling and Simulation in the Applied Sciences	National Science Foundation	\$241,470
Haffner, John C.	Agriculture	Investigate the Use of a Far Infrared Emitting Fabric (FIEF) on Oxidative Status and Salivary Cortisol Concentration in Horses	Minds Over Matter LLC	\$5,049
Fischer, Robert U.	Dean's Office, CBAS	Tennessee Louis Stokes Alliance for Minority Participation	Tennessee State University	\$39,600
Cui, Song	Agriculture	Evaluating Heliae Microalgae Products for Improving Soil Health and Enhancing Soil Carbon Sequestration Potential of Winter-wheat and Tall Fescue Monocultures	Heliae Development, LLC	\$20,838
Zhang, Mengliang	Chemistry	Development of Expert Computer Programs for Identification of Secondary Metabolites in Mass Spectral Data	U.S. Department of Agriculture	\$20,000
Cui, Song	Agriculture	Transformational Education for Climate Smart Agriculture in Rural Southern US	Sam Houston State University	\$204,711
Lovett, Jennifer N.	Mathematical Sciences	Preparing to Teach Mathematics with Technology - Examining Student Practices [PTMT-ESP]	National Science Foundation	\$594,112
Law, Zada L.	Geosciences	For professional services relating to the preservation of historic resources	TN Historical Commission	\$50,000
Downs, Kevin M.	Agriculture	US Poultry Foundation Industry Education Recruitment Funding	US Poultry Harold E. Ford Foundation	\$6,918
Salem, Mohamed S.	Biology	The Landscape of Histone Modifications in the Rainbow Trout Genome	US Department of Agriculture	\$10,000
Easson, Cole G.	Biology	Collaborative Research: Investigations into Microbially Mediated Ecological Diversification in Sponges	National Science Foundation	\$237,692
Haffner, John C.	Agriculture	Pilot Study to Determine EIV Immune Responses in Horses	Boehringer Ingelheim Vetmedica Inc.	\$4,433
Walker, Donald M.	Biology	Assessing the Restoration Success of WRP Easements in Tennessee and Kentucky	Tennessee Tech. University	\$257,649
Rushton, Gregory T.	TN STEM Education Ctr.	Education Research Program	US Dept. of Education	\$461,430
Carter, Jessica G.	Agriculture	A grant for upgrades to the MTSU dairy Facility	Tennessee Dept. of Agriculture	\$28,000
Gao, Ying	Agriculture	Scientific validation and export market validation of wild growth characteristics of commercial-scale ginseng seedlings production	Tennessee Dept. of Agriculture	\$29,915
Walker, Donald M.	Biology	Endangered Tennessee Bats and development of WNS biocontrol agents	TN Wildlife Resources Agency	\$19,732
Farone, Mary B.	Biology	Trafficking of Two Novel Potential Pathogenic Intranuclear Bacteria in Eukaryotic Cells	National Institutes of Health	\$357,052.00
COLLEGE OF BEHAVIORAL AND HEALTH SCIENCES				
Rust, James O.	Psychology	School Psychology Intern Program	TN Dept. of Education	\$780,000
Turnage, Barbara F.	Dean's Office, CBHS	Characterizations of ecologically at-risk high elevation brook trout streams in Eastern Tennessee	TN Assoc. of Drug Court Professionals	\$8,000
COLLEGE OF BUSINESS				
Arik, Murat	Bus. & Econ. Research Ctr.	Tennessee Association of Mental Health Organizations: An Economic and Fiscal Impact Assessment	TN Assoc. of Mental Health Org.	\$19,550
Urban, David J.	TN Small Bus. Dev. Ctr.	TSBDC at MTSU 2019	Small Business Admin. Professionals	\$123,000
COLLEGE OF EDUCATION				
Ridgley, Robyn L.	Elementary & Special Educ.	TECTA Scholarships	Tennessee State University	\$6,000
COLLEGE OF LIBERAL ARTS				
Leonard, Kevin A.	History	Internships at Rutherford County Archives 18-19	Rutherford County, TN	\$37,664
Foran, Nicole P.	Art and Design	Middle Tennessee Visiting Artists Residency Program	TN Arts Commission	\$3,550
Foran, Nicole P.	Art and Design	After-School Arts Program for Homer Pittard Campus School	TN Arts Commission	\$2,235
West, Carroll V.	Ctr for Historic Preservation	Transportation Systems Used During the Cherokee Removal of 1838-1839	National Park Service	\$60,000

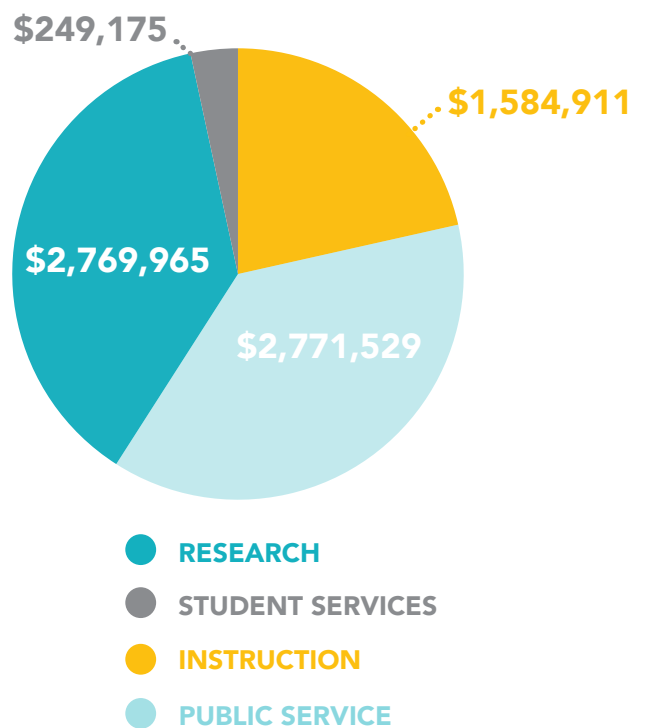
PI	DEPARTMENT	TITLE	FUNDER	AMOUNT
COLLEGE OF LIBERAL ARTS (CONT.)				
Hodge, Shannon C.	Sociology and Anthropology	Design, Printing, and Distribution of Posters for Tennessee Archaeological Awareness Month	TN Historical Commission	\$3,614
Monteblanco, Adelle	Sociology and Anthropology	Hot Spots for Resilience in Border Cities: A Pilot Study in El Paso, TX	University of Arizona	\$2,016
Bundage, Raphael B.	Governor's School	Governor's School for the Arts 2019	TN Dept. of Education	\$480,042
COLLEGE OF MEDIA AND COMMUNICATION				
Reish, Gregory N.	Ctr for Popular Music	Improving Storage, Access, and Sustainability of American Vernacular Music Collections	National Endowment for the Humanities	\$205,000
GRADUATE STUDIES				
Chafin, Cynthia R.	Ctr for Hlth & Human Services	Sudden Infant Death Syndrome and Death Scene Investigation	TN Dept. of Health	\$554,400
Chafin, Cynthia R.	Ctr for Hlth & Human Services	All Children Excelling through a Comprehensive Network of Trained Providers	TN Dept. of Children's Services	\$60,983
Apigian, Charles H.	Data Science Institute	Research Agreement with Hytch Rewards LLC	Hytch Rewards LLC	\$5,000
Chafin, Cynthia R.	Ctr for Hlth & Human Services	MTSU Proposal for SAMHSA Mental Health Awareness Training	Substance Abuse & Mental Health Services Admin.	\$124,979
ACADEMIC AFFAIRS				
Denton, Alexis L.	MT Engage	Peer ePortfolio Tutoring—SERS	TN Board of Regents	\$13,263
PRESIDENT'S OFFICE				
Geho, Patrick R.	TN Small Bus. Dev. Ctr.	Tennessee Small Business Development Center-Lead Center	Small Business Admin.	\$2,088,301
VP, BUSINESS AND FINANCE				
Peaster, Carl S.	University Police	VOCA Law Enforcement Victim Coordinator	TN Office of Criminal Justice Programs	\$58,196
Peaster, Carl S.	University Police	STOP, Law Enforcement DV/SA Investigator	TN Office of Criminal Justice Programs	\$60,000

45 New Awards 25 Departments \$7,375,580 Total Award Value

AWARD AMOUNTS BY FUNDING SOURCE



AWARD AMOUNTS BY PROJECT TYPE



UNDERGRADUATE EVENTS AND OPPORTUNITIES

Poster and Pitch: Designing Stellar Research Posters and Memorable Pitches

Are you getting ready to design a research poster for a class or academic conference/event? This free, one-hour workshop will introduce you to design principles of research posters and accompanying elevator pitches that consider audience, purpose, and mode. Leave with strategies on deciding what information to include in your poster and what to leave out, making rhetorically informed design decisions, and ways to craft and deliver an exciting elevator pitch that supports your poster and piques your audience's attention. This workshop, open to all MTSU students, will be facilitated by MTSU's University Writing Center in collaboration with the Office of Research and Sponsored Programs. Snacks will be served.

The first workshop took place on Jan. 29, and was well attended by students. Another opportunity to take advantage of this workshop is:

- **Wednesday, Feb. 27, 3 p.m., Walker Library, Room 272**

Scholars Week Poster Exhibition: Call for Abstract Proposals

MTSU's Scholars Week is an annual, week-long celebration of research, scholarship, and creative projects. Scholars Week 2019 will be held March 18–22. The week will feature guest speakers and other events, then culminates in a University-wide poster fair of student research posters and creative performances on March 22. If you are interested in presenting your research at the poster exhibition, you may submit your abstract online. **Deadline for submission is Tuesday, Feb. 26.**

For more information, visit mtsu.edu/scholarsweek

Applications for Undergraduate Research Experience and Creative Activity (URECA) Grants

Did you know that you can get paid to do research while gaining valuable experience alongside a faculty mentor? The Office of Research and Sponsored Programs administers University funds to directly support mentored undergraduate research through Undergraduate

Research Experience and Creative Activity (URECA) grants. Awards range from \$500 for beginners to \$3,500 for experienced researchers. Check out our website for application requirements. **Summer applications are due Thursday, March 28, by 3:00 p.m.**

Save the Date! URECA Luncheon, April 10

In conjunction with the MTSU Spring Showcase and Undergraduate Research Week, the Undergraduate Research Center invites all current and previous URECA scholars and mentors to join us for lunch as we celebrate the successes of undergraduate research.

Undergraduate Research Programs Conference 2019

Ohio State University is host for the June 27–29 conference, Building and Enhancing Undergraduate Research and Creative Inquiry Programs, in Columbus, Ohio. **Abstract and proposals deadline: Feb. 19**

For more information, visit <https://www.cur.org/what/events/conferences/urpc/2019/>

Congratulations to the following URECA recipients and their faculty mentors (listed in parentheses) on the successful completion of the research projects during the Fall 2018 semester.

Isabella Barnett
(Mengliang Zhang)

Marina Ibrahim
(Rebecca Seipelt-Theimann)

Daviesha Carter
(Rebecca Seipelt-Theimann)

Autumn Martin
(Tom Brintaupt)

Amos Cheruiyot
(Nate Callendar)

Jada Muriel
(David Nelson)

Korissa Earls
(Elizabeth Smith)

Robyn Sessler
(Cameron Gordon)

Merna Ghobrial
(Rebecca Seipelt-Theimann)

McKenna Stinnett
(Lauren Rudd)

Gabrielle Hampton
(Anthony Newsome)

Myranda Uselton
(Jing Kong)

Will Haase
(Josh Phillips)

STUDENT RESEARCH SPOTLIGHT

Isabella Barnett, a URECA Gold Scholar for Summer 2018, presented her research titled "Detection and Classification of Ignitable Liquid Residues on Substrates by Using Direct Analysis in Real Time Mass Spectrometry" at the Tennessee Academy of Science annual conference and won first place in the Chemistry Student Poster Presentation. (Faculty mentor: Mengliang Zhang)

Abigail Choisser, a Geosciences major and recipient of a URECA Gold award for Fall 2018, presented her research, "Insight into Interrelationships among Density, Viscosity, Crystallinity, and Chemical Composition within Hypocrystalline Intermediate Lavas, Mt. Hood Volcano, Oregon," at the Geological Society of America conference in Indianapolis. (Faculty mentor: J. Warner Cribb)

Vishaka Motheramgari, who earned a URECA Assistant award for Summer 2018, presented her research, "Quantitative Analysis of Local Water Samples for Algal Toxin: Microcystin-LR," at the Tennessee Academy of Science annual conference. (Faculty mentor: Mengliang Zhang)

Robyn Sessler, a Psychology major given a URECA Assistant award for Fall 2018, presented her research entitled "Is Gratitude the Reason Mindful Couples Are Happier?" at the Association of Behavioral and Cognitive Therapies conference in Washington, D.C. This research was presented in collaboration with a graduate student from the University of Tennessee. (Faculty mentor: Cameron Gordon)

**MIDDLE
TENNESSEE**
STATE UNIVERSITY.

I AM *true*
BLUE

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